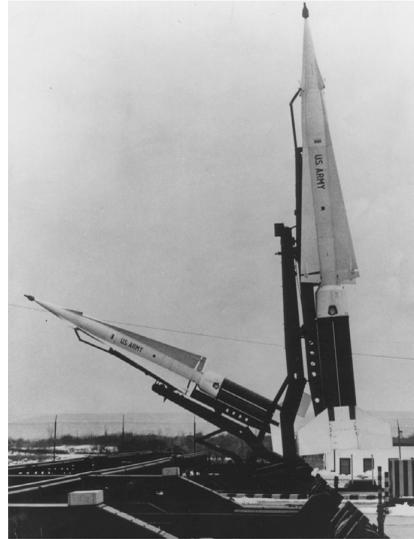


staging and supply base for Army anti-aircraft gun battalions located throughout the metropolitan New Jersey-New York area. In 1954, the army started replacing anti-aircraft guns with new Nike Air Defense Missiles.

The Nike Missile was designed to intercept and destroy fast, high altitude jet warplanes before they reached a metropolitan area. The first type, the Nike Ajax (based at Sandy Hook 1954-1959), had a range of 30 miles and a maximum altitude of 60,000 feet. The larger and more advanced Nike Hercules (at Sandy Hook 1958-1974), could carry either a conventional or nuclear warhead more than 100 miles at an altitude of over 150,000 feet.



Hercules Nike Missiles, circa 1968

The introduction of the Intercontinental Ballistic Missile (ICBM) led to the deactivation of the entire Nike Air Defense system. ICBM's were faster than the Nike Hercules, and when tests failed to make the Nike an anti-missile weapon it was phased out of service during 1974.

Fort Hancock's long role of guarding the harbor ended on August 15, 1974. The Army formally deactivated the 16th Air Defense Artillery Group at Fort Hancock, and dedicated "Guardian Park" to commemorate the Nike Missile Air Defense Era. When Fort Hancock closed on December 31, 1974, Sandy Hook had witnessed the entire progression of fortifications and weapons used to defend an American Harbor.



For further information write: Sandy Hook, Gateway National Recreation Area, PO Box 530, Fort Hancock, NJ 07732 or phone: 732-872-5970. Web address: www.nps.gov/gate

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The Defenses of Sandy Hook

Sandy Hook
Gateway National Recreation Area
National Park Service
U.S. Department of the Interior

Sandy Hook's location at the entrance to New York Harbor made it an important site for the defense of New York City. Large enemy warships had to navigate the Sandy Hook Channel to attack the harbor, putting them within cannon range of Sandy Hook. The series of forts built on Sandy Hook from Colonial days to the modern missile era represented the latest defense systems. Each fort used the newest technological improvements in weapons and construction techniques of their time.

EARLY FORTIFICATIONS 1776-1865

There were no Continental Army fortifications on Sandy Hook during the American Revolution. This situation allowed a British fleet to sail unopposed into the harbor and land an army that captured New York City in 1776. British loyalists then fortified and guarded the Sandy Hook Lighthouse from attack by American Patriots for most of the Revolution.

During the War of 1812, the British Navy blockaded American harbors including New York. American forces built a wooden fortification named Fort Gates near the Hook's tip. Although British forces attacked several American cities during the war, they never attacked New York. This conflict proved that America needed to defend its maritime ports with permanent and reliable fortifications.

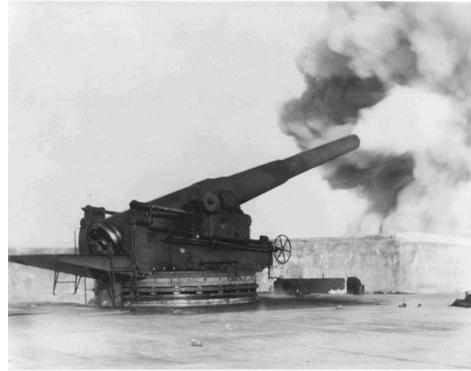
In 1859, Army Engineers started building a massive, granite masonry fort at the north end of Sandy Hook. However, before the "Fort at Sandy Hook" could be completed, rifled artillery was introduced. This new technology pulverized brick and granite walled forts, making this type of fortification obsolete.

CONCRETE GUN BATTERIES 1890-1945



The Fort at Sandy Hook, circa 1880

After the Civil War army engineers spent years trying to devise a new type of fortification that could resist rifled artillery and protect America's harbors against large and powerful European navies. In 1890, the United States introduced the concrete gun battery, which mounted the most modern and powerful cannons of the day. These gun batteries were designed to blend into the seashore environment for protection and camouflage.



Battery Potter firing , circa 1893

Because New York Harbor was America's most important port, Sandy Hook was chosen as the site for America's first concrete gun batteries. Here the Army constructed its first, and only, steam-powered "lift-gun battery." Battery Potter, named to honor Civil War General Joseph Potter, was completed in 1895. It mounted two 12-inch caliber breech-loading, rifled guns. Each gun was mounted on a large elevator platform powered by steam-driven hydraulic machinery. The guns were lifted through openings on the roof, and could fire half-ton armor-piercing projectiles seven miles. After firing, the gun platforms moved back down inside for reloading. This procedure made the guns disappear from the enemy's view, and soldiers started calling them "disappearing guns."

Sandy Hook was also the site of America's first mortar battery. Completed in 1894, it mounted sixteen 12-inch caliber breech-loading rifled mortars, which were divided equally in four massive concrete and earth covered "firing pits." The mortars were designed to fire armor-piercing projectiles, weighing up to 1,000 pounds, in high arcs to bombard an approaching enemy battleship or cruiser from above.

With two new gun batteries completed, and several others being planned for, the Army needed to designate them as an officially named fort. On October 30, 1895, the War Department designated the fortifications at Sandy Hook, Fort Hancock. This honored Civil War hero Major General Winfield Scott Hancock.

Battery Potter proved too costly to build, and took too long to fire its guns. To reduce costs and improve the efficiency of the disappearing gun concept, counterbalanced gun carriages were developed during the early 1890's. This simple design greatly reduced manufacturing and maintenance costs while increasing a gun's rate of fire. A large counterweight, connected to two pair of steel arms holding a large gun barrel, dropped

down and quickly raised the gun up from behind a protective concrete wall. When the gun came up over the wall it was fired. Firing made the gun recoil (kick back) behind the wall and back into its loading position. A well-trained gun crew could fire two rounds a minute from a 10- or 12-inch counterweight mounted gun. From 1896 to 1909, seven counterweight-type disappearing gun batteries, mounting a total of sixteen 6-, 8-, 10-, and 12-inch caliber guns were built at Sandy Hook. These included Battery Granger, and the Nine-gun Battery at North Beach.

Fort Hancock's defenses also included smaller gun batteries that mounted 3-, 5-, and 6-inch caliber guns. These weapons could be loaded, aimed and fired quickly to sink small, fast enemy warships like destroyers and torpedo boats. From 1898 through 1904, five rapid-fire gun batteries were built on Sandy Hook. A good example is Battery Gunnison, originally a 6-inch disappearing gun battery when it was built in 1904. It was modified during World War II when its two Model 1900 6-inch Barbette guns were mounted. Today, they are the only surviving guns of Fort Hancock's gun batteries. All other guns were scrapped before, during, or just after World War II.

By World War I, battleship guns out-ranged disappearing gun batteries. To out-range battleships, the Model 1917 Barbette carriage, was introduced. This carriage allowed 12-inch guns to fire at a high angle over twenty miles in any direction. During 1917-1919, the Army built two Barbette gun batteries on Sandy Hook's bayside where they couldn't be seen by enemy warships. Named Battery Kingman and Battery Mills, they each mounted two 12-inch caliber guns.

With the introduction of warplanes, the U.S. Army quickly added anti-aircraft guns to protect its coast artillery forts from enemy air attack. By World War II, Fort Hancock had several anti-aircraft gun batteries located at or near its older gun batteries. Batteries Kingman and Mills were also modernized during this war. Their guns were protected from aerial bombing by the addition of thick concrete walls and roofs called casemates. However, the awesome weapons and changing tactics of World War II finally made the concept of defending harbors with heavy artillery obsolete.

COLD WAR 1950-1974

The Korean War kept Fort Hancock active as a



Battery Kingman firing, 1919